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ABSTRACT

In 1971, the South Dakota Regents of Education adopted a resolution that stated that all graduate programs at South Dakota State University, the University of South Dakota, South Dakota School of Mines and Technology, Northern State College, and Black Hills State College be rejustified to the Regents. If such programs could not be rejustified, they were to be dropped from the degree offerings at the institutions. In a study of graduate education in the State as a whole, it was found that: (1) the need for Ph.D. graduates from South Dakota colleges and universities is not present, and there is only limited need for its master's graduates; (2) improved quality of graduate education calls for fewer graduate programs and strengthening those remaining; and (3) graduate programs of quality are expensive and will require large amounts of state funds if they are to be continued and improved. Included in the report is a listing of those graduate programs that have been suspended and those that have been continued at each of the State colleges and universities. (HS)

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GRADUATE PROGRAMS

IN

SOUTH DAKOTA STATE COLLEGES AND UNIVERSITIES

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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RECOMMENDATIONS SUBMITTED TO SOUTH DAKOTA REGENTS OF EDUCATION

BY

DR. RICHARD D. GIBB
COMMISSIONER OF HIGHER EDUCATION

HE 003 719

JUNE 14, 1972
STATE CAPITOL
PIERRE, SOUTH DAKOTA

Regents of Education

State of South Dakota
State Capitol Pierre, South Dakota 57501
(605) 224-3455

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July 11, 1972

TO: LEGISLATORS

FROM: Richard D. Gibb
COMMISSIONER OF HIGHER EDUCATION

I earlier sent to you a copy of my recommendations concerning graduate programs on the various campuses. I am now enclosing a summary of action taken by the Board during the June meeting. The following programs have been suspended by the Board of Regents:

A. SOUTH DAKOTA STATE UNIVERSITY
Programs Suspended

1. M.S. - Agricultural Education
2. M.E. - Biological Sciences
3. M.S. - Botany
4. M.E. - Chemistry
5. M.S. - Child Development and Family Relations
6. M.S. - Agricultural Economics
7. M.S. - Industrial Economics
8. M.A. - General Economics
9. M.E. - Education
10. M.E. - English
11. M.S. - Guidance and Counseling
12. M.E. - Physical Education
13. M.E. - Home Economics Education
14. M.S. - Horticulture
15. M.A. - Journalism
16. M.E. - Journalism
17. M.S. - Mathematics
18. M.S. - Nutrition and Food Science
19. M.S. - Pharmaceutical Chemistry
20. M.S. - Pharmacology
21. M.S. - Physics
22. M.E. - Physics
23. M.A. - Rural Sociology
24. M.A. - Speech
25. M.E. - Speech
26. M.S. - Textiles and Clothing

27. Ph.D. - Chemistry
28. Ph.D. - Agricultural Economics
29. Ph.D. - Entomology
30. Ph.D. - Plant Pathology

NOTE: All graduate programs in engineering are to be suspended June 30, 1973, unless additional justifications are submitted in the interim for their continuation.

B. THE UNIVERSITY OF SOUTH DAKOTA
Programs Suspended

1. M.A. - Biology
2. M.A. - Chemistry
3. M.A. - Classics
4. M.A. - Geology
5. M.N.S. - Geology
6. M.A. - Physics
7. M.N.S. - Physics
8. M.A. - Mathematics
9. M.A. - Foreign Language
10. M.A. - Philosophy
11. Master of Medical Science

NOTE: All graduate programs in the Medical School will be suspended, effective June 30, 1973, unless they can be rejustified to the Regents in the interim period.

C. SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY
Programs Suspended

1. Ph.D. - Physics

NOTE: All Ph.D. programs in engineering will be suspended, effective June 30, 1973, unless they can be rejustified to the Regents in the interim period.

D. NORTHERN STATE COLLEGE
Programs Suspended

1. M.S. - Elementary Supervision
2. M.S. - Secondary Supervision
3. M.S. - School Administrators--Superintendents
4. M.S. - Special Education

E. BLACK HILLS STATE COLLEGE
Programs Suspended

1. M.S. - Secondary Education (with emphasis in fourteen areas)

The following programs have been retained by the Board of Regents:

A. SOUTH DAKOTA STATE UNIVERSITY
Programs Retained

1. M.E. - Agricultural Education
2. M.S. - Agricultural Engineering
3. M.S. - Animal Science
4. M.S. - Bacteriology
5. M.S. - Biology
6. M.S. - Chemistry
7. M.S. - Dairy Science
8. M.S. - General Economics
9. M.E. - Education
10. M.A. - English
11. M.S. - Entomology
12. M.E. - Guidance & Counseling
13. M.S. - Physical Education
14. M.E. - Social Science
15. M.S. - Home Economics Education
16. M.S. - Journalism
17. M.E. - Math
18. M.S. - Agronomy
19. M.S. - Plant Pathology
20. M.S. - Rural Sociology
21. M.S. - Wildlife Biology
22. M.S. - Zoology

23. Ph.D. - Animal Science
24. Ph.D. - Agronomy
25. Ph.D. - Rural Sociology

B. THE UNIVERSITY OF SOUTH DAKOTA
Programs Retained

1. M.N.S. - Biology
2. M.N.S. - Chemistry
3. M.A. - Communications
4. M.A. - Curriculum Instruction
5. M.A. - Economics
6. M.A. - Educational Administration
7. M.A. - English
8. M.A. - Counseling
9. M.A. - Government
10. M.A. in Ed. - Physical Education
11. M.A. - History
12. M.N.S. - Math
13. M.A. - Psychology
14. M.A. - Sociology
15. M.A. - Theatre
16. M.B.A.
17. M.M. - Music

18. Ph.D. - Psychology
19. Ed. D.

C. SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY
Programs Retained

1. M.S. - Chemical Engineering
2. M.S. - Civil Engineering
3. M.S. - Electrical Engineering
4. M.S. - Geology & Geological Engineering
5. M.S. - Mechanical Engineering
6. M.S. - Metallurgical Engineering
7. M.S. - Mining Engineering
8. M.S. - Chemistry
9. M.S. - Math
10. M.S. - Meteorology
11. M.S. - Physics

D. NORTHERN STATE COLLEGE
Programs Retained

1. M.S. - Elementary Teaching
2. M.S. - Elementary School Principal
3. M.S. - Secondary School Principal
4. M.S. - Guidance

NOTE: M.S. in Education in Secondary Teaching will remain but areas are yet to be determined.

E. BLACK HILLS STATE COLLEGE
Programs Retained

1. M.S. - Elementary Education

You will note that in a number of instances, although a number of programs were dropped from a given department, one graduate program still remains. As an example there were four master's programs in economics at SDSU, and the Regents determined that one should remain. Thus, the department still retains a Master's Degree in Economics. The same thing was also true in other instances at SDSU, as well as at USD.

cc/Governor Kneip
Legislative Research Council

I. INTRODUCTION

In early 1971, the Regents approved a Master Plan recommendation which indicated:

> All Ph.D. programs at SDSU, USD, and SDSM&T and master's programs at NSC and BHSC must be rejustified to the Regents and if they cannot be rejustified, they will be dropped.

Subsequent to that, the Regents agreed that all graduate programs on all of the campuses offering graduate work must be rejustified. (The original recommendation did not include master's programs at SDSU, USD, and SDSM&T.) The institutions submitted the written rejustifications to the Regents' Office and to each of the Regents last fall. Since then, time has been spent in going through the rejustifications and in analyzing the need for these programs in South Dakota.

A decision was made several months ago that there would be merit in bringing in one or two consultants to help review the programs and to assist in making recommendations. With this in mind, Dr. Merle Allen, who is currently Associate Director for Academic Affairs for the Colorado Coordinating Council on Higher Education, and Dr. Dan Hobbs, who holds a similar position with the Board of Regents in Oklahoma, were asked to assist in reviewing the program rejustifications. The consultants have had considerable experience with both undergraduate and graduate programs. Dr. Allen was formerly the Director of the Coordinating Council in Utah, a state with problems somewhat similar to those in South Dakota. It is a large state geographically but small in population and it has approximately the same number of state colleges and universities as South Dakota. The problems in Colorado are somewhat different than those in South Dakota, but there are also many similarities. The same thing is true in Oklahoma, a state which has not enjoyed good tax support for higher education in the last two decades.

Dr. Allen met with the Regents at the April meeting when hearings were held on graduate programs. Dr. Hobbs, because of heavy involvement with the Appropriations Committee in Oklahoma, was unable to meet with the Regents at that meeting.

It should be noted and strongly emphasized that planning for graduate programs is not the same thing as planning for undergraduate programs. There is often a tendency for institutions with master's degrees to want to develop a sixth year program and/or doctoral programs. Similarily, there is in most of the public institutions a tendency for those without graduate programs to attempt to develop them. In this connection, it is worthwhile to quote from a "Report of a Visit to Dakota State College, Madison, South Dakota, April 5-6, 1971, for the Commission on Institutions of Higher Education North Central Association of Colleges and Secondary Schools":

> There has been very little planning for program revisions in light of (a) over-supply of teachers, (b) static enrollment projection, and (c) societal changes and problems that are bringing great revisions in public school programs and needs. Such planning at this time should replace the unrealistic and ineffective planning for graduate programs.*

It goes further to say:

> There are reasons why this college should not now plan a graduate program in Elementary Education. Three of the more serious reasons are:
>
> 1. That upper division programs in several departments should first be improved. (Examples: Chemistry, Mathematics, Music, English.)
>
> 2. The financial resources necessary for a program of graduate education are not likely to be available. Arguments that such a program can be initiated with very little extra costs are unimpressive.*
>
> 3. Supportive disciplines, as the social and biological sciences, should be greatly improved.

We quote from the North Central Report not in any way related directly to the programs at Dakota State but to indicate that the North Central Association team points out that graduate programs involve extra cost and that undergraduate programs should have priority.

In order to illustrate further North Central's attitude, the following quote is from a letter from North Central to President Freeman (August 4, 1969).

> The Association also wishes to caution the institution concerning the expanding in the graduate area until the Master of Education degree program is strong and viable.

In a "Report of a Visit to Black Hills State College, Spearfish, South Dakota, March 10-12, 1969, for the Commission on Colleges and Universities of the North Central Association of Colleges and Secondary Schools", the visiting team said:

> The existing M.Ed. program must be strengthened, particularly in-depth.... [One questions whether the facilities and collection (of the library) are adequate to support both the undergraduate and graduate programs.] It seems imperative for Black Hills State College to declare a moratorium on any further development of master's programs until the existing M.Ed. program is strengthened, particularly as it relates to in-depth development of the liberal arts aspect. Moreover, a moratorium is necessitated until special attention is given to the adequacy

*Underlining mine.

> of library and laboratory facilities, the performance record of the M.Ed. graduates and the adequacy of preparation of the faculty.

A North Central report (April 9-12, 1967, Northern State College) indicated:

> ....it is imperative that the College refrain from early expansion into other master degree fields or into a sixth year program for teachers and school service personnel. For the present, the limits of Northern State Colleges' academic resources are being fully taxed in meeting existing objectives.

A letter dated April 3, 1968, from North Central to Dr. Moulton, who was then President of the University, indicated:

> With respect to the Ed.D. programs, the Association was concerned with inadequate staffing of the department for offering doctoral programs, with the subsequent strain on the undergraduate programs, inadequate library and financial resources and lack of involvement of social science faculty in the planning of doctoral programs.

(Since that time the Ed.D. program has been reaccredited.)

Closing, combining, or suspending programs, either undergraduate or graduate, is a traumatic experience for a campus. For many dedicated faculty members, there is a "hope blooms eternal" attitude and this is commendable. To illustrate the magnitude of this feeling, a comment is taken from one of the graduate program justifications:

> Our collection of approximately 850 books falls short of the 1,600 which, according to the librarian, should be considered minimal for a B.A. program in Philosophy, and far short of the 3,000 he tells us is modest for an M.A. A recent increase from $200 to $980 for acquisitions will, if continued, allow us to remedy this situation in the coming decades.

In this instance, the persons responsible for writing the justifications are holding onto the hope that <u>decades</u> from now there will be enough money to provide for an adequate library for that program! It is a tribute to the faculty members if they are willing to wait that long. However, if the inadequate library resources result in a lower quality program, we should either close the program or do something about the library shortages immediately. We should not wait for decades!

In order to determine whether programs should be discontinued, several key factors must be considered. One obviously has to look at the <u>need</u> for the program. The second factor which must be considered is the <u>contribution</u> (or lack thereof) which the graduate programs make to the college or the university. A third factor which must be considered is the <u>quality</u> of the program, both for the present and in the future. A fourth factor is the <u>cost</u> of the program, including both present and projected future. A more detailed analysis of lack of these factors follows.

II. NEED

Need must be considered from two viewpoints--that of the individual student and that of the state and nation.

One idea is that the state has an obligation to provide opportunities for all students in any area of interest. It is suggested that even though far more students want to enroll in a given program than would be needed by the state or by the nation, there is, nevertheless, an obligation to provide them with such an opportunity. If no employment is available upon graduation, that becomes the student's problem.

The other philosophy is that the state does not have an obligation to provide an unlimited opportunity for all students in all areas regardless of the state's or country's needs.

Article by Dale Wolfe and Charles Kidd:[1]

> A policy of deliberate restraint on the production of doctorates runs counter to many widely accepted values. The doctrine that over the long run society and the economy can productively absorb all of the highly trained people who can be produced is rather deeply ingrained.... However, the doctrine of infinite absorptive capacity certainly does not justify a careless and highly expensive laissez-faire approach to the number of doctorates produced. Absorptive capacity is flexible, but it does not provide a rationale for unlimited expansion, particularly when society rather than the individual bears most of the cost.
>
> There is also the notion that any qualified person who wants to pursue a course of study leading to a doctoral degree should be able to do so. The expansion of doctoral-level training in recent decades has without doubt been in substantial part the result of a willingness and desire to give the customers what they want. Looking to the future, however, we see little merit in the argument that society should finance doctoral-level training for everyone with the necessary ability.... The demand for the product should be a major determinant of decisions, and we see the prospective markets as justifying some restraint on the output of doctorates....
>
> Only a little more than half of the 60 top universities in the country are public, and state action will have little effect on the others. Moreover, not all states have coordinating or governing boards with enough authority to limit the development of new institutions. Even in states which do have this authority, most public universities have resisted state efforts to plan their graduate programs. This is a thorny political problem. Ideally, state constraints on the creation of new doctorate programs and on the output of existing programs are clearly indicated, but in the real world such constraints are sometimes not applied wisely or objectively.*

The following information on supply and demand is furnished by Dr. Lyman Glenny:[2]

*Underlining mine.

National production of doctorates almost tripled from 1958-1969: from 8,952 to 25,734 (USDE, 1967). By 1976-77 the U.S. Office of Education estimates that 38,700 will be produced per year--about 13,000 more than in 1969. In a letter to the author, Allan Cartter, Chancellor of New York University, estimates that the annual doctorate capacity at the institutions currently authorized to offer degrees will be between 40,000 and 50,000 by 1976. More recently Lewis Mayhew predicted a figure of 70,000. But, in 1964, Cartter suggested that the then existing shortages would continue only through the late 1960s, and in the early 1970s surpluses would occur. From the evidence he seems to be right. What does he now say about the future?

He and a colleague, Robert Ferrell, estimate that in 1980 there will be 24,550 new doctorates available for teaching but only 11,600 vacancies, even if we improved the student-faculty ratio by one percent a year (1969). Cartter also estimates that the proportion of doctorates who go into teaching will drop from roughly 50 percent, which has prevailed for many years, down to 20 or 30 percent by 1980. Thus, even with the reduced figures which he suggests, the excess of doctorates over established need will be substantial.

Dr. Glenny goes on to say:

Without dwelling on a myriad of minor issues, there are five grave, closely interrelated problems facing public and non-public institutions of the states: 1) underwriting the cost; 2) reducing anticipated surplus production; 3) maintaining the quality of the degree; 4) changing the character of some doctoral degree training; and 5) absorbing surplus doctorate holders.

Taken further from Dr. Glenny's discussion is the following:

The latest available figures reported by Heiss (1970) show that 50 institutions in the country produced 90 percent of all doctorates and the remaining 10 percent are produced by the other 190 doctoral institutions. One might conclude that all 190 of the other universities should close out their programs, thus saving a great deal of money and simultaneously reducing doctorate production by 10 percent. However, some of these schools have sufficiently well-founded programs so that it would be unwise to eliminate them.

Nevertheless, many low production doctoral programs should be eliminated and all but a few of the 190 institutions should refrain from starting additional programs. Indeed, perhaps no institution should start a new program unless it is highly innovative, fully interdisciplinary, or in a discipline where there is a national shortage. Programs that may well be eliminated are those which have not or will not reach optimum enrollments before 1974 or 1975. If they have not done so by then, they are unlikely to thereafter.* Other programs for elimination may be those which are few in number in an institution and are in fields already showing large surpluses.

*Underlining mine.

Elimination of a program has traumatic effects. The institutions and their faculties have worked long and difficult hours in planning and initiating the programs, even on a limited scale. Also, they have probably spent years obtaining staff and resources as well as authorization to offer a doctorate. No school will want to give up a program, although an objective view might dictate otherwise.

Dr. Allan Cartter who correctly predicted a surplus of Ph.D. holders by the early 1970s has the following to say:[3]

For the last ten to fifteen years there has been a great deal of talk about changing the pattern or structure of graduate education--but little action.... In the world of the 1960s it is not too surprising that these debates achieved little consensus and less implementation, for we were all living in a prosperous world of seemingly constant development and expansion.

The 1970s are going to be dramatically different. For the next few years the budgetary constraints upon most universities are going to be painfully burdensome. The availability of monies from external sources to support new programs will be minimal and the sharp decline in fellowship support for graduate students from federal sources will tend to place additional burdens on the university just when its traditional forms of support--from tuition, private gifts, and state legislatures--are likely to be shrinking in real terms.

Perhaps even more dramatically different will be conditions in the academic labor market. We have lived for thirty years in a period where highly trained talents were in critically short supply; we have now entered a period where our attention will be forcibly shifted to the problems of oversupply of PhDs and excess capacity.

This year's newborn will be the class of '92 and not within that timespan can we expect any relief from rising birthrates. Few people realize that the under five population in 1969 was 12 percent below its 1965 level; when that age group arrives at college about 1980 it is easily predictable that they will be able to pick and choose among many hundreds of institutions suffering from acute excess capacity.

The combination of a slowing down in the growth rate of the age group (in fact, a slight decline in the early 1980s), a slowing down in the rate of increase in college entrance, and an expected, relatively constant retention rate, add up to a flattening out of expected total college enrollment by the end of this decade. Thus the derived demand for new college teachers should consistently decline over the coming decade.

I see no way of interpreting this as anything but bad news for the universities and the graduate schools for the foreseeable future.

> Clearly the higher educational system needs some signals, and some means must be found to restrain many of the newly developing institutions from engulfing the doctoral market.* Voluntary cutbacks, such as a few distinguished private universities have made this year, are one avenue. Stricter controls over graduate enrollments by state coordinating boards are another. It has been suggested in some quarters that the federal government, rather than reducing its support of graduate education across the board and exacerbating the financial crisis of many of the large universities, should instead indicate that federal policy for the next decade will be to select perhaps 75 universities that will be eligible for federal funds.

One report of Ph.D. joblessness came out in June, 1971, and indicated that as of June 1, 1971, 348 of 865 chemistry Ph.D.s who registered with the Cooperative College Registry, Washington, D.C., for academic positions that fall were still seeking jobs.[4]

Perhaps the most startling comments concerning the difficulty of a Ph.D. graduate finding employment was a quote taken from the Bulletin of the Education Commission of the States:[5]

> "The man or woman with a Ph.D. in history is finding that he has disqualified himself for almost every job that society has to offer outside the four-year colleges." This is a disturbing opinion expressed by Lawrence Stone of Princeton in the American Historical Association's Newsletter.
>
> At a time when the teaching profession finds itself overcrowded at all levels, one of the hardest hit is the person who is trained almost exclusively for teaching at four-year colleges.
>
> "Schools, businesses, banks, even community colleges think that a person with a Ph.D. is over-trained, over-specialized, and likely to be discontented and therefore inefficient in some other employment," Stone continues. "Some placement offices are now advising graduates to conceal the fact that they possess a doctorate in history when they go looking for jobs."

In a Regent's Report to the Iowa Legislature, the following gloomy picture was made about the outlook for employment by those who had received Ph.D.s in the various science areas:[6]

> In the last ten years the University of Iowa and Iowa State University have awarded a total of 5,106 Ph.D. degrees.
>
> But the times have changed. The rapid growth on Ph.D.s has slowed considerably and from the look of the job market many holders of doctors degrees in the coming years will have to find employment in areas they hadn't expected. In short, there will be more Ph.D.s in the future than can be used in the traditional areas of the university research and instruction and the usual research and development jobs in industry.

*Underlining mine.

In the Regent's Report, they quoted an article published by the American Association for the Advancement of Science which said:[7]

> "Many new doctorates will enter nontraditional jobs and will do work that has not attracted many of their predecessors. Moreover, unless strong corrective actions are taken soon, new doctorates in the 1980s will face even bleaker prospects for jobs in the fields where they have traditionally been employed. For colleges and universities will make few new appointments during the 1980s but will be able to educate more doctoral candidates than can be effectively employed in positions which have thus far required this level of education."
>
> The National Science Foundation predicts for 1980 there will be between 315,000 to 336,000 doctorate degrees awarded and a predicted utilization for only 270,000. The rest will have to find jobs not usually anticipated for Ph.D. holders. The Bureau of Labor Statistics predicts an over supply of school teachers, mathematicians, and life scientists in coming years with shortages of chemists, counselors, dietitians, dentists, and physicians.

One should distinguish between <u>needs</u> and <u>wants</u>. A student may <u>want</u> a certain program but there may not be a <u>need</u> for graduates in that area in the state or in the nation.

If money were a "free good" and if there were unlimited financial resources in South Dakota, we would subscribe to the philosophy that the state should "give them what they want." Such is <u>not</u> the case, however, and if the resources are limited, it is our position that the state does <u>not</u> have an obligation to provide <u>all</u> of the opportunities wanted by <u>all</u> of the students regardless of whether there is a need or not. It is obvious that South Dakota has limited financial resources and the Regents have an obligation to spend them in the best possible way. It does not make sense to offer programs in a number of areas which are in low demand (even though they may be wanted by the students) if that takes money away from programs greatly needed from the state or national viewpoint. A good example is the health services area where there are critical shortages. South Dakota would be well advised to spend its resources in those areas where there are now and will continue to be shortages instead of continuing to produce surpluses. Little, if any, <u>need</u> exists in South Dakota for graduates of most of the Ph.D. programs in the state. Except for those few who go into teaching in South Dakota, most go out of state. South Dakota can easily obtain all the Ph.D. graduates it needs even if no institution in the state produces them.

The same situation which prevails for Ph.D. students does not prevail for master's students in South Dakota. While it is probably true that South Dakota could acquire all of the master's graduates without master's programs in the state, it would be highly impractical to do so. Certification requirements for teachers dictate that teachers go back to school after they have received their bachelor's degree, and it would probably be impractical to expect all of them to do this if they had to go out of state. Consequently, a strong case can be made for master's level programs in certain areas of the state. The need, however, for the individual master's programs varies

greatly. As an example, the need for teachers in the public schools with master's degrees in physics is quite limited. It certainly does not take many institutions in the state to meet that need.

SUMMARY OF NEED:
The need for Ph.D. graduates from South Dakota colleges and universities is not present, and there is only limited need for its master's graduates.

III. CONTRIBUTION TO THE COLLEGE OR UNIVERSITY

Contributions of graduate programs to the campus may be in terms of financial contribution or in terms of quality, directly or indirectly. Financial contribution will be treated in the section under costs.

It has often been said that in order to have a quality undergraduate program, a Ph.D. program is imperative. Except for a few limited areas, this is absolutely not correct. Literally dozens of small private four-year colleges in the country have achieved outstanding reputations without graduate programs. While this does not prove the desirability of graduate programs, it is rather good evidence that a graduate program is not imperative to the development of a quality undergraduate program.

It is also said that a Ph.D. program is necessary in order to attract and retain outstanding faculty members. This statement is subject to questioning. We were told three years ago when the Ph.D. program in chemistry was suspended at the University, that the faculty would leave and that the quality of the undergraduate program would deteriorate. At the graduate hearings in early April, President Bowen was asked if he had had difficulty in attracting and/or retaining a quality faculty in chemistry since the Ph.D. program had been suspended. His answer was one word--"No."

It is, of course, true that many faculty members would prefer that the Ph.D. program continue, but it does not follow that they would leave if it does not. If the Ph.D. program is imperative to provide a quality undergraduate program, it follows that we should develop strong Ph.D. programs on every campus and in every discipline. If that is not done, it must mean they are not imperative.

One factor which should be considered, but which cannot be measured, is the "flag-waving" impact that a given graduate program brings to an institution. Graduate programs should not be retained simply as status symbols. Nevertheless, many dedicated faculty members have worked for years to develop graduate programs and believe they are somehow a symbol of the welfare of the institution. There is some feeling, for example, at The University of South Dakota, that the University should have one or more Ph.D. programs as a matter of state pride. This is fine if, indeed, South Dakota is willing to support such a program, but if it does so at the expense of undergraduate programs, it is probably a bad allocation of resources. Nevertheless, the faculty morale problem is one that should be of legitimate concern.

IV. QUALITY

There is no exact way of determining academic quality.

The fact that a program has been accredited by North Central, NCATE, or one of the other accrediting associations does not "prove" that it is of high quality. As indicated previously in another document, a student may pass a course but he may pass with a grade of A, B, C, or D. He did not do quality work if he received a D grade, but nevertheless he passed. In most cases when he received an A grade, he has done outstanding work. There is a great deal of difference between the A grade, the C grade, and the D grade. Similarly, there are great differences in degrees of accreditation. Accreditation is essentially a "pass-fail" system. It does not show how well the institution passed.

It is generally agreed by most academicians that it is quite difficult to develop quality without a significant number of students and depth in the faculty. Many graduate programs offered in South Dakota have very few students, especially those at the doctoral level. It is also unfortunately true that on many campuses far too many courses are offered for both undergraduate and graduate credit and far too few courses are offered exclusively for grad students. In this connection, the North Central Association says:[8]

> In the interest of instituting and maintaining a level of work of graduate caliber, the number of courses admitting both graduate and undergraduate students should be limited. Dual numbering and listing of the same courses at two levels should be discouraged. Unless there is a sufficient number of courses open to graduate students only, the graduate program is likely to differ little from the undergraduate program.* The stated expectation, in courses carrying graduate as well as undergraduate credit, that graduate students do extra work is too often ignored to be regarded as an acceptable alternative.
>
> The institution should be able to demonstrate that there is enough demand for graduate programs in its service area to assure a sufficient number of students for a well-developed program. An adequate student body does not exist when the numbers are too small to justify a variety of courses and other experiences or to provide sufficient interaction. Moreover, a graduate program is less likely to be of adequate quality when most students enroll only on a part-time basis.

Concerning the quality of the doctoral programs, Dr. Glenny states:[9]

> The proliferation of doctoral programs and doctorate institutions has significantly increased the cost of higher education which concomitantly has had a negative influence on quality. Very few of the newly authorized programs across the nation are being financed at levels which approach the average for the top 50 institutions. Financing has not been sufficient to provide good libraries, equipment, buildings, and faculty. Most of the newly born are struggling for life by sucking the blood out of the undergraduate programs.*
>
> In states which have limited financial resources, it would seem sensible to bring undergraduate educational levels up to or

*Underlining mine.

beyond national norms rather than to increase the amount of graduate education. Unlike high school graduates or those holding bachelors degrees, for whom local markets absorb the majority, doctorate degree holders are in a national market. States which have limited resources should not, out of false pride, try to compete with the well-to-do states* in the numbers of doctoral students produced, but rather hire the necessary graduate degree holders in the open market. That market will be plentifully supplied during the next decade and beyond. This also means that those unfortunates who do earn doctorates at second-or third-rate graduate schools will find little or no demand for their services in a glutted market.

The marginal student, when he becomes aware of the oversupply of PhDs, will be wary of undertaking work beyond the master's. The highest ability students who go on will be attracted, as they are now, to the better graduate schools, leaving the remaining students for the 190 or so institutions with the smallest and poorest capacity to produce quality work. Moreover, because of the small enrollments, many of these programs may have unit costs which exceed those of better institutions.

The watchwords for the 1970s should be: *Limit the number of doctorate programs and improve the quality.**

A two-year study begun in 1969 by the Education Department of New York at the request of Education Commissioner, E. B. Nyquist, was sharply critical of the quality of master's degree programs in that state.[10]

Nyquist called for the study because he was "deeply concerned with the lack of quality that has accompanied the rapid expansion of graduate education." Nyquist said that several steps have already been taken to improve the quality of graduate work. This included a one-year moratorium on all new doctoral programs and the appointment by the Regents of the Commission to review doctoral education.

The department's study found the higher institutions in New York State:

....ambitious but over-extended in their attempts to participate in the nation's vast expansion of graduate studies. At the master's level, these efforts often resulted in a mediocre quality of study that was supported by low admission and course standards, which were in turn caused mainly by the institutions' attempts to serve large numbers of students who needed course credits for professional certification.

The report was especially critical of the emphasis placed on graduate programs in education, primarily to accommodate teachers who are seeking the required number of hours of graduate education to obtain permanent certification.

In another high priority area, the report recommends that regional cooperative approachs among institutions could

*Underlining mine.

> strengthen graduate programs. Fiscal and personnel limitations now make it difficult for individual institutions to provide the range of resources and specialties required of strong programs and to attract sufficient numbers of students to support complete facilities for graduate level study.

The report further said:

> Institutions should review existing programs, making improvements when possible, but discontinuing those that have not been able to achieve qualitative and quantitative expectations....

Examination of graduate program offerings on the various campuses in South Dakota, the number of students, the number of graduates, and the number of faculty, makes it clear that the quality of programs in far too many instances is low. In those instances, the programs should either be eliminated, combined with other campuses, or vastly strengthened. As an example, in virtually every instance, at the graduate level where more than one campus is offering a program, combining them on one campus would improve the quality. In many instances, not only would the quality improve, but the costs would decline, and one institution could still meet the needs of the state for graduates in that area.

It would be infinitely better to concentrate the necessary graduate programs in South Dakota in relatively few locations and provide quality programs than to scatter them at the expense of their quality.

SUMMARY:
Improved quality calls for fewer graduate programs and strengthening those remaining.

V. COST

Each of the institutions has made an estimate of the "cost" of its graduate programs. At the present time, estimating costs of graduate programs is at best a difficult business. We are not going to go through the cost analysis for each graduate program on each campus. We think instead it would be much better to discuss costs of graduate programs in general terms and consider more what the costs will be in the future than what they are now.

Graduate programs are expensive.

The North Central Association says:[11]

> The cost per student for providing graduate education is substantially greater than for undergraduate education. Support for graduate programs entails higher cost for every component-faculty salaries, stipends for graduate students, secretarial services, special library resources and facilities, and research cost. Faculty credit hour loads usually must be reduced to provide more time for course preparation, for research, and for work with individual students. Not only must initial investment in sustaining cost be assured but the budget must also accommodate increasing support for programs if they are to flourish. These higher costs must not weaken the undergraduate program. Tuition income from increasing numbers of

graduate students seldom balances the increasing costs. An institution should also recognize that the addition of a graduate program will have significant affects on its undergraduate program. An adequate graduate program involves much more than simply adding a few courses to the existing undergraduate program. Unless substantial additional resources are available, the added burden of the graduate program will reduce a good undergraduate program to mediocrity.* Resources--staff, finances, facilities--sufficient for operation of an adequate undergraduate program will not support both an undergraduate and a graduate program.

The following is taken from a "Leadership in Public Education Study":[12]

> It is only recently that higher education institutions have started to examine their procedures and programs in relation to their costs. A whole new set of procedures have had to be developed and a new center at the Western Interstate Commission for Higher Education--The National Center for Educational Management Systems--has been set up with U.S. Office of Education and Ford Foundation support to pursue this complex task.
>
> The procedure is to break down all costs to a student credit hour basis by level: lower (freshman and sophomores), upper (juniors and seniors), Masters and Doctorate. This method reveals clearly that the costs are lowest at the beginning of undergraduate education and increases steadily with the doctoral level being the most expensive.

Dr. Glenny says:[13]

> A recent estimate by the National Science Foundation placed total graduate education costs for the nation in 1970 in excess of undergraduate expenditures. This is true despite the fact that the undergraduate enrollment was ten times as great as the graduate enrollment. Generally speaking, estimates of the cost of doctoral programs range from $3,000 to $10,000 per year for operations alone. Dr. Cartter recently estimated the cost to be $4,090 for the Humanities, $5,320 for the Social Sciences and $7,040 for the Sciences. Allowing for the attrition factor, Dr. Cartter has indicated that the average cost of the science degree is $62,000.

The cost estimates as submitted by the campuses probably greatly underestimate some of the costs, especially those in the library. The Board of Regents library consultant, Dr. Arthur McAnally of the University of Oklahoma, said in a communication dated November 9, 1971:

> College library needs are limited because for undergraduate teaching the same titles are used over and over again.
>
> In the university, however, use is non-repetitive. The same titles are not used over and over again (except for the undergraduate program where 100,000 to 150,000 volumes are adequate).

*Underlining mine.

> The reason is that in research and graduate learning, each scholar explores a new area or is supposed to. Therefore, there are no limits to the size of the university library.*
>
> There are a few measures of minimum size for universities. 1,000,000 volumes is a very well known standard. The Clapp-Jordon formula recommends ca. 500,000 volumes for the two South Dakota universities. The collections must continue to grow in size indefinitely because older materials cannot be discarded.
>
> Any time you approve a graduate program at a former college, you're throwing off the limits. Sooner or later you'll need a new building to accommodate an ever-growing collection. Library costs will be increased by a factor of five to ten times the college level. Graduate program and research needs are limitless, and so are their library costs.

It is generally accepted by those who have spent considerable time studying the cost of academic programs, that there is a direct relationship between the cost of the undergraduate programs at the lower level, the upper level, and the graduate programs. One of the most comprehensive cost studies done for academic programs is one which has been carried out in Illinois during the past seven years. Their latest cost information shows costs as follows for the state colleges and universities in that state.[14]

Lower Division Cost per semester hour - $36.64
Upper Division Cost per semester hour - $58.47
First Year Graduate Program per semester hour - $102.72
Doctoral Programs per semester hour credit - $156.48

A Colorado cost study on academic programs (which was only for instructional salary cost) showed the following results:[15]

Lower Division Cost per semester hour credit - $ 9.05
Upper Division Cost per semester hour credit - $13.58
Master's Level Cost per semester hour credit - $27.60
Doctoral Level Cost per semester hour credit - $34.11

A California study shows the following instructional cost per semester credit hour:[16]

University of California

Lower Division - $ 23.63
Upper Division - $ 45.16
Graduate - $127.47

California State College System

Lower Division - $19.27
Upper Division - $26.03
Graduate - $45.74

*Underlining mine.

(At the graduate level there was no breakdown between the master's level and the doctoral level cost.)

A study, "Instructional Analysis of Tennessee Public Higher Education", conducted by the Tennessee Higher Education Commission, found the following relative costs by level for students in education with the average for all fields per credit hour:[17]

Lower Division	- $ 12.65
Upper Division	- $ 20.30
Master's and Professional	- $ 46.98
Doctorate	- $111.68

A cost of instruction study for South Dakota state colleges and universities shows the following direct instructional salary costs per semester credit hour:

Lower Division	- $16.32
Upper Division	- $24.36
Master's Level	- $46.55
Doctoral Level	- $67.01
Weighted Average	- $20.28

One should not attempt to compare the costs in California with those of Colorado, Illinois, Tennessee, or South Dakota. The information presented is not intended to be a direct comparison between states, but of costs between divisions within a state, and the pattern is the same in all. It shows that upper division costs are significantly higher than lower division costs and that graduate costs are far greater than those at the undergraduate level.

It is almost amusing that graduate programs are or are not expensive depending upon reasons for submitting the cost figures. For the past several years we have received budget requests from each of the campuses, and on numerous instances we have had special requests for money to support the graduate programs. The budget discussions always indicate that graduate programs are expensive. In this connection, last fall when we asked for budget requests, we asked each of the institutions to come in with a "formula" request, and to develop this they had to indicate what they thought would be the appropriate ratio between students and faculty. That information is as follows:

Desired Student-Faculty Ratio By Campus
(as submitted by the campuses)

Level	SDSU	USD	SDSM&T	NSC	BHSC	DSC	USDS
Lower Division	25:1	25:1	12:1	25:1	20:1	22:1	30:1
Upper Division	15:1	20:1	9:1	20:1	18:1	18:1	20:1
GI (Masters)	12:1	15:1	6:1	15:1	15:1		
GII (Doctoral)	8:1	8:1	4:1				
Prof.		15:1 Law					
		5:1 Med					
Tech.							15:1

The University of South Dakota indicated it would consider an appropriate ratio 25:1 at the lower division and 8:1 at the doctoral level. SDSM&T indicated a ratio of 12:1 at the lower division and 4:1 at the doctoral level (does not include general studies students). In every case the institution suggested a lower student-faculty ratio at the upper division and graduate level than at the lower division. If this is the case, and if the budget was funded accordingly, it would almost be automatic that salary costs would be considerably higher at the advanced level of instruction. (Please keep in mind that this is only instructional cost but also keep in mind that salary costs represented 84 percent of the budget for the present fiscal year.)

Decisions should not be made only upon costs at the present time for graduate programs but anticipated costs in the future. There can be no other conclusion than that doctoral programs will be very expensive in the future and master's programs somewhat less so. It does not necessarily follow that they should be discontinued because they are expensive. But as we consider cost, we should look to the future and the inescapable conclusion is that these programs will be very expensive. If Dr. McAnally is correct about libraries, there will be major library expenses for graduate programs in the future. In the absence of Ph.D. programs, it might not be necessary to build a new library or to expand an existing one. With the continuation of a number of Ph.D. programs on three campuses, it is inevitable that there will have to be massive increases of money in the library budgets in the future. Every dollar that is spent in this manner is a dollar less available for some other program.

Perhaps it is appropriate here to respond to the presentation made by The South Dakota School of Mines and Technology concerning costs of the graduate programs on that campus. Charts shown indicated that the cost, so far, for the graduate programs is on the order of one million dollars and that this had enabled the institution to acquire approximately six million dollars in federal grants. When the multiplier factor was used, it meant far more than this to the economy of the state. Assuming for the time being that the figures are correct, does it follow then that this was a good investment? The answer is yes, if that million dollars could not have been better spent in some other place and no, if the million dollars would have been better spent in another place. For example, if that million dollars had been spent to improve already existing graduate programs on another campus, and if it enabled that campus to attract not six million but ten million dollars, then it was not a wise allocation of resources. Concentrating the graduate programs on fewer campuses and strengthening those programs will result in more federal grants and outside grants than will be obtained by scattering the programs throughout the state system of higher education. Normally, it is much easier for a high quality program to attract outside funds than one of mediocre quality.

Another argument in favor of graduate programs is that through the use of graduate assistants, the cost of instruction at the lower division level is substantially reduced. This may or may not be the case. If graduate assistants are used for instruction at the lower division level, not in the presence of full-time academic teachers, the cost of instruction might be low (but quality may suffer). On the other hand, if graduate assistants are used in conjunction with the regular teacher, this can be a distinct asset to academic instruction, but it will increase the cost per semester credit hour.

Although in general Ph.D. programs are quite expensive and master's programs are somewhat expensive, it does not necessarily follow that all Ph.D. programs and all master's programs are expensive. Normally, the main reason for expensive programs is the very, very small class size. In those graduate programs where the class sizes are relatively large, quite often the cost per semester credit hour is not unnecessarily high.

It is often stated that the graduate programs are offered at no cost inasmuch as the courses are offered by faculty members as "an overload." This argument should be discounted. While it is true that faculty members often will teach a graduate course on an overload basis; nevertheless, a cost must be assessed because if a faculty member can be assigned a graduate course on an overload basis, the same thing can be done for undergraduate courses. Past experience indicates that many graduate programs are developed under the argument that the faculty, facilities, equipment, etc. are already available and there will be no additional cost. We have yet to see one instance where there has been no additional cost.

There is genuine danger in basing graduate programs on the expectations of incoming outside grants. We have already had some unfortunate experiences in South Dakota whereby programs were funded with "soft" money; this soft money disappeared, and the program could no longer be adequately supported. A good example is the Ph.D. program in chemistry at The University of South Dakota.

SUMMARY ON COSTS:
Graduate programs of quality are expensive and will require large amounts of state funds if they are to be continued and improved.

VI. ANALYSIS AND COMMENTS

A. Number of Majors, Graduates, and Graduate Faculty

Tables I through V provide information concerning the number of degrees, number of majors, graduates, and faculty members who teach graduate courses. This information has been provided in the institutional graduate program justifications, but we have put it in summary form for easy review. Tables I, II, and III show information for SDSU, USD, and SDSM&T. Tables IV and V are not exactly comparable in that some of the information (that for secondary teaching) is not quite the same as for the other programs. Table IV for Northern State College shows the number of students enrolled Fall 1970 in eight areas of secondary education and the number of graduates in 1971. The rest of Table IV is quite comparable to Table I through III. Table V for Black Hills State College is somewhat different in that it shows the number of graduates the last five years for both elementary and secondary by area and the number of faculty who are involved in the teaching of graduate courses.

One cannot avoid expressing concern as he studies the number of students enrolled, the number of graduates, and the number of faculty as shown in the tables. (By the same token, many of the programs show up very well with respect to number of majors, graduates, and teaching faculty.)

Tables I through V show that at the present time there are 106 master's degrees (not counting the areas of concentration in secondary education at

both Black Hills and Northern State College), one Ed.D. program, and seventeen Ph.D. programs. Of major concern is the fact that at SDSU, nineteen of the graduate programs have graduated five or fewer students during the last five year period of time. As an example, you will note that in Textiles and Clothing, there have been only two graduates during the last five years. You will note also that there have been only two graduates the last five years in Horticulture. Other examples could be cited.

At The University of South Dakota, there are seven graduate programs which have graduated five or fewer students during the last five years. Note for example that in Classics there has been only one graduate. The School of Mines shows a somewhat respectable number of graduates in each of its graduate programs during the last five year period of time with the exception of the two Ph.D. programs. We would expect, of course, that inasmuch as those programs were approved in 1967 there would be a relatively low production for the first few years. (Also true for Ph.D. programs in engineering at SDSU.)

The production of graduates with a Master of Science in Elementary Supervision is especially low at Northern State College, and Black Hills State College has a number of areas of emphasis in their program with very few graduates. Perhaps the most striking of these is in mathematics, which has had only one graduate the last five years and which has only one faculty member teaching courses at the graduate level.

Tables VI, VII, VIII, and IX provide information concerning the home addresses of students currently enrolled in graduate programs, as well as the present addresses of graduates of the graduate programs. In Table VI it is shown that the percent of South Dakota students who are currently enrolled for graduate credit ranges from a high of 90 at Northern to a low of 50 at The University. Inasmuch as most of the graduate effort is directed toward teacher education at both Northern and Black Hills State, we would expect them to have a higher percent of students enrolled from within the state. The University has a relatively low figure and some of this is explained through their close location to Sioux City, Iowa.

Of equal interest in Table VI is the information which shows that of the graduates during the last five years, there is a range of 16 percent from SDSM&T who currently live in South Dakota up to 63 percent from BHSC who now live in this state. One might conclude that inasmuch as 63 percent of the graduates in graduate programs at BHSC stay within the state, more emphasis should be given to such programs and that less emphasis should be given to those where only 16 percent remain in the state. That suggestion, of course, receives considerable support throughout the state. On the other hand, the relatively low percent of 16 from SDSM&T indicated at least two things. First, the opportunities for employment of graduates in the graduate programs at SDSM&T are relatively limited in South Dakota and secondly, the graduates of that institution are in great demand in other states. Decisions related to the various percentages are largely philosophical in nature. Tables VII, VIII, and IX provide a further breakdown by subject matter area of the present addresses of those who have received master's and doctoral degrees from SDSU, USD, and SDSM&T in the last five years.

B. Specific Comments about BHSC and NSC

Black Hills State College--Master's Degree

The justification for the master's degree at Black Hills State College indicates that the Master of Education degree was approved for Black Hills State College on January 20, 1959, and later changed to a Master of Science in Education in February of 1971. The language of the Board meeting in 1959 is as follows:

> That the Regents of Education authorize Black Hills Teachers College to offer a program of graduate work during the summer of 1959, leading to the Master's degree in Education.

In February, 1971, the Regents approved a role for Black Hills State College including various degrees. The degrees authorized were: Associate degree, the Bachelor of Science in Education, the Bachelor of Science degree, and the Master of Science in Education. Although a single master's degree has been authorized for Black Hills State College and they list only one master's degree, it is the staff's opinion that they are offering a master's degree in fourteen different areas. Those areas are: Business, English, Speech, Psychology, Guidance and Counseling, Special Education, Education, Music, Industrial Arts, Physical Education, Biology, Chemistry, History, and Sociology. We are not sure that there is any difference between offering one master's degree in fourteen different areas or fourteen different master's degrees. While I have no idea what the intent of the Board was in 1959, I doubt seriously if it was to approve master's degrees in fourteen areas of concentration. Although the number of students enrolled and the number of graduates sounds somewhat impressive when considering a single program, when these figures are broken down into the various areas, it puts the programs in a very different light. For example, Black Hills State College lists 47 faculty members teaching in their graduate program, but a breakdown by area (Table V) shows a number of areas with six or fewer graduates the last five years and in many instances only two or three faculty members teach graduate courses. It was indicated earlier that in mathematics there has been only one graduate in the last five years and there is only one faculty member teaching in that area. There are only two faculty members teaching graduate programs in the areas of Biology, Business, Chemistry, and Sociology. There have been only four graduates in Sociology, three in Chemistry, and five in Industrial Arts in the last five years. It should also be noted that of the 114 courses listed in the graduate justifications (not including independent study, thesis, etc.) 55, or almost exactly one-half, are for both advanced undergraduate and graduate students. Just over 50 percent are exclusively for grad students.

Northern State College also indicates a Master's degree in Secondary Classroom Teaching and has eight sub-headings within that. The same comments as were made for Black Hills State would be applicable for Northern State College, but to a lesser extent.

C. Duplication within a Campus

In many instances, more than one kind of master's degree is provided in a given subject matter area. As an example, at South Dakota State University there are four different master's degrees in the Department of Economics.

That department offers a Master of Science in Agricultural Economics, a Master of Science in General Economics, a Master of Arts in General Economics, and a Master of Science in Industrial Economics. It offers both the Master of Arts and the Master of Education in English as well as for Physical Education. It offers three master's degrees in Journalism. The University of South Dakota offers a Master of Natural Science as well as a Master of Arts in Biology and a Master of Arts and a Master of Natural Science in Chemistry. While there are sometimes no great problems inherent in offering several master's degrees in a given area, as a rule there are very few, if any, advantages and in our opinion it tends to dilute the quality of the offering.

As an example, in 1971 there were two graduates with the Master of Science in Agricultural Economics, two with Master of Science in General Economics, one with Master of Arts in General Economics, and one with Master of Science in Industrial Economics, for a total of six master's graduates in that area in the last year. It is our position that a better arrangement would be to offer only one master's degree in that discipline in an effort to improve the quality of the program.

Table I
South Dakota State University

Information on Degree Programs,
No. of Majors, No. of Graduates, and No. of Teaching Faculty

Degree		No. Majors Last Five Years (1967-71)	No. Grads Last Five Years (1967-71)	No. Fac. Teaching Graduate Courses
M.S.	Ag. Ed.	1-2-1-2-1	0-0-1-0-0	6
M.Ed.	Ag. Ed.	18-18-36-28-27	8-0-6-3-4	6
M.S.	Ag. Engr.	11-8-8-8-9	4-8-1-1-3	13
Ph.D.	Ag. Engr.	0-2-4-5-5	0-0-0-0-0	13
M.S.	An. Sci.	9-9-12-18-14	8-10-8-4-10	18
Ph.D.	An. Sci.	14-17-14-19-17	1-4-5-3-4	18
M.S.	Bacteriology	6-6-9-7-13	5-1-5-7-4	7
M.S.	Biol.	1-6-8-7-17	1-2-4-4-3	59
M.E.	Biol. Sci.	0-4-5-3-5	0-4-1-2-4	19
M.S.	Botany	SDSU Requests that it be dropped		
M.S.	Chem.	11-11-18-13-16	5-5-4-6-4	18
M.E.	Chem.	(New program - 1971)		18
Ph.D.	Chem.	1-6-7-9-9	0-0-0-2-1	18
M.S.	Child Dev. & Fam. Relations	2-1-1-2-2	0-0-0-0-0	4
M.S.	Civil Engr.	26-19-24-27-20	11-12-9-16-13	17
Ph.D.	Civil Engr.	0-1-2-2-5	0-0-0-0-0	17
M.S.	Dairy Sci.	7-6-6-8-6	5-2-2-3-5	13
M.S.	Agr. Econ.	4-3-2-3-3	2-2-2-3-2	14
Ph.D.	Agr. Econ.	1-2-3-2-1	0-2-0-0-0	14
M.S.	Gen. Econ.	4-5-6-5-7	2-1-2-2-2	14
M.A.	Gen Econ.	2-3-1-2-1	0-2-1-0-1	14
M.S.	Ind. Econ.	2-1-1-1-1	1-1-0-1-1	14

Table I
South Dakota State University (Contd.)

Degree		No. Majors Last Five Years (1967-71)	No. Grads Last Five Years (1967-71)	No. Fac. Teaching Graduate Courses
M.S.	Education	6-5-4-3-4	5-3-2-0-0	8
M.E.	Ed.	245-216-306-303-327	79-68-54-70-34	8
M.S.	Electr. Engr.	16-23-26-31-37	0-7-7-10-8	8
M.A.	English	20-24-28-29-34	3-3-4-6-4	7
M.E.	English	4-7-9-7-4	1-0-2-3-2	7
M.S.	Entomology	5-6-7-8-9	1-2-1-2-3	14
Ph.D.	Entomology	9-11-12-12-11	0-0-1-0-4	14
M.S.	Guid. & Couns.	4-3-3-4-4	3-1-2-4-0	6
M.E.	Guid. & Couns.	121-103-226-239-321	8-41-44-69-53	6
M.S.	PE	30-36-26-29-31	11-11-24-28-24	9
M.E.	PE	42-44-46-59-44	7-8-16-15-11	9
M.E.	Soc. Sci.	2-4-5-4-5	0-1-1-5-9	14
M.S.	Home Ec. Ed.	5-4-3-9-4	1-0-4-3-1	2
M.E.	Home Ec. Ed.	1-1-0-0-0	0-1-0-0-0	2
M.S.	Hort.	2-1-2-2-2	1-1-0-0-0	4
M.S.	Journalism	5-11-12-13-10	1-0-5-0-2	6
M.A.	Journalism	2-3-3-4-2	0-3-1-1-1	6
M.E.	Journalism	3-0-0-0-0	0-4-0-0-0-	6
M.S.	Math	2-3-3-4-5	0-0-0-0-0	8
M.E.	Math	July, 1971		8
M.S.	Mech-Engr.	12-12-17-22-20	9-3-8-5-7	6
M.S.	Nutrition & Food Sci.	2-2-1-2-1	1-0-0-2-1	5
M.S.	Pharmaceutical Chem.	1-2-1-0-1	0-1-1-0-1	2
M.S.	Pharmacology	2-1-1-3-1	1-1-0-2-1	1
M.S.	Physics	2-2-3-2-2	2-0-1-2-2	5
M.E.	Physics	SDSU Requests that it be dropped		

Table I
South Dakota State University (Contd.)

Degree		No. Majors Last Five Years (1967-71)	No. Grads Last Five Years (1967-71)	No. Fac. Teaching Graduate Courses
M.S.	Agron.	10-12-14-16-20	3-4-4-2-8	32
Ph.D.	Agron.	5-6-8-10-13	2-1-0-2-1	32
M.S.	Plant Path.	2-4-2-2-1	0-2-1-0-1	21
Ph.D.	Plant Path.	SDSU Requests that it be dropped		
M.S.	Rural Soc.	7-10-10-5-4	1-3-3-1-2	6
M.A.	Rural Soc.	0-0-0-4-0	0-0-0-4-0	6
Ph.D.	Rural Soc.	8-8-11-14-19	0-0-1-2-3	6
M.A.	Speech	3-0-0-7-6	1-0-3-4-3	6
M.E.	Speech	3-3-9-8-7	1-0-3-4-3	6
M.S.	Textiles & Clothing	1-1-1-1-1	0-0-1-1-0	3
M.S.	Wildlife Biol.	24-24-19-23-24	5-12-11-4-11	5
M.S.	Zoology	4-5-4-10-8	1-3-2-2-7	7

Table II
University of South Dakota

Information on Degree Programs
No. of Majors, No. of Graduates, and No. of Teaching Faculty

Degree		No. Majors Last Five Years (1967-71)	No. Grads Last Five Years (1967-71)	No. Fac. Teaching Graduate Courses
M.A., M.M.S.	Anatomy	1-0-0-0-0	0-0-0-0-0	5
M.A.	Biochemistry	3-1-4-1-0	1-0-1-1-1	7
M.N.S.,M.A.	Biology	60-70-61-68-72	28-39-32-30-33	13
M.A., M.N.S.	Chemistry	31-32-23-24-21	0-12-17-11-16	7
M.A.	Classics	1-1-1-2-2	0-1-0-0-0	1
M.A.	Communications	25-19-24-8-16	19-26-30-13-11	12
M.A.	Curric. Instr.	Info not available	67-75-73-105-84	17
M.A.	Economics	2-0-0-3-2	1-0-0-1-2	5
M.A.	Ed. Admin.	10-15-9-10-56	1-2-0-3-11	5
M.A.	Eng.	17-28-25-27-23	12-23-24-20-16	14
M.A.	Counseling	20-11-23-33-47	16-27-33-35-66	9
M.A.	Geol.	5-5-6-8-10	2-1-0-1-4	6
M.N.S.	Geol.	6-5-5-4-9	11-9-9-5-7	6
M.A.	Physics	6-3-2-3-2	6-2-2-2-0	4
M.N.S.	Physics	5-7-4-6-1	5-7-4-6-1	4
M.A.	Gov't.	15-20-20-25-27	6-9-6-11-11	12
M.A. in Ed.	P.E.	6-7-15-12-20	10-15-10-15-26	6
M.A.	Hist.	21-22-18-26-27	20-20-19-23-14	11
M.A., M.N.S.	Math	30-21-31-32-28	18-21-18-23-30	15
M.A.	For. Lang.	6-6-7-10-10	7-1-2-2-4	5
M.A.	Philos.	1-4-4-5-6	0-1-0-0-0	3
M.A.	Physiol. & Pharmacology	6-2-1-2-1	5-2-0-0-0	11
M.A.	Psych.	16-16-13-19-6	12-5-10-6-4	15
M.A.	Soc.	4-6-8-23-21	6-2-6-2-4	13

Table II
University of South Dakota (Contd.)

Degree		No. Majors Last Five Years (1967-71)	No. Grads Last Five Years (1967-71)	No. Fac. Teaching Graduate Courses
M.A.	Theatre	13-14-8-16-14	10-10-7-6-6	6
M.B.A.		16-23-26-29-35	13-11-18-21-25	8
M.M.	Music	12-10-4-11-6	12-13-6-13-9	14
Master of Medical Science		Info not available		
Ph.D.	Anatomy	0-0-2-2-3	0-0-0-0-0	5
Ph.D. & M.A.	Biochem	5-3-7-9-6	0-1-0-2-2	7
Ph.D. & M.A.	Microbiol.	6-6-6-6-6	1-1-2-0-2	7
Ph.D.	Physiology & Pharmacology	10-5-3-3-1	1-1-1-2-1	9
Ph.D.	Psych.	3-16-22-31-25	0-6-5-12-8	15
Ed.D.			22-27-32-29-18	33

Table III
South Dakota School of Mines and Technology

Information on Degree Programs
No. of Majors, No. of Graduates, and No. of Teaching Faculty

Degree		No. Majors Last Five Years (1967-71)	No. Grads Last Five Years (1967-71)	No. Fac. Teaching Graduate Courses
M.S.	Chem. Engr.	2-9-8-12-10	1-4-7-5-7	6
M.S.	Civil Engr.	7-12-18-25-35	1-3-9-10-14	13
M.S.	E.E.	8-13-17-14-18	6-3-6-12-9	10
Ph.D.	E.E.	0-0-1-3-5	0-0-0-0-1	10
M.S.	Geol. & Geol. Engr.	11-9-9-17-19	5-4-4-4-4	7
Ph.D.	Geol. & Geol. Engr.	0-1-2-4-6	0-0-0-1-0	7
M.S.	Mech. E.	6-6-12-14-16	3-1-3-11-6	5
M.S.	Met. Engr.	6-5-7-5-5	5-1-5-5-1	6
M.S.	Mining Engr.	2-2-4-8-7	2-1-3-7-6	4
M.S.	Chem.	5-11-12-13-15	2-3-2-3-8	7
M.S.	Math.	7-9-7-10-11	3-1-4-3-4	9
M.S.	Meteorology	9-11-6-7-10	0-3-2-4-3	9
M.S.	Physics	5-9-6-7-6	3-4-3-6-3	6
Ph.D.	Physics	Not activated since approved in 1967		6

Table IV
Northern State College

Information on Degree Programs
No. of Majors, No. of Graduates, and No. of Teaching Faculty

Degree		No. Majors Last Five Years (1967-71)	No. Grads Last Five Years (1967-71)	No. Fac. Teaching Graduate Courses
M.S.	Element	32-40-42-25-25	5-5-8-7-8	25
		(No. Enrolled) (Fall 1970*)	(No. Grads) (1971*)	
M.S.	Classroom Teaching			
	Secondary	34	26	39
	Art	3	1	3
	Business	2	5	4
	Eng.	13	7	7
	HPER	6	5	4
	IA	7	3	2
	Math	-	3	2
	Music	2	1	9
	Soc. Sci.	1	1	8
M.S.	Elem. Supr.	1-5-3-4-3	0-0-1-1-1	30
M.S.	Sec. Supr.	1-5-3-4-4	0-0-2-2-4	30
M.S.	El. Sch.-Princ.	28-28-23-20-23	8-12-12-6-8	46
M.S.	Sec. Sch.-Princ.	31-27-24-32-39	12-9-6-8-6	15
M.S.	School Admin.-Supt.	26-21-24-9-10	13-9-11-5-6	14
M.S.	Guid.	51-56-42-36-32	17-19-14-15-17	9
M.S.	Sp. Ed.	20-28-26-33-26	7-4-9-24-24	17

*See Exhibit E, Page 127, of NSC graduate program justification document sent to each Regent for additional enrollment information.

Table V
Black Hills State College

Information on Degree Programs
No. of Majors, No. of Graduates, and No. of Teaching Faculty

Degree	Elementary	No. Grads Last 5 Years	No. Fac. Teaching Graduate Courses	Secondary	No. Grads Last 5 Years	No. Fac. Teaching Graduate Courses
M.S.	Eng.	10	5	Biol.	7	2
	Eng. & Speech	14	5	Biol. & P.E.	1	
	Hist.	6		Bus. Ed.	20	2
	Hist. & Soc.	29		Bus. & P.E.	1	
	Soc.	3	2	Chem.	3	2
	Spec. Ed.	5	2	Eng.	6	5
	Biol.	4	2	Eng. & Sp.	31	
	G. & C.	2	6	G. & C.	7	6
	Music	3	4	G. & C. & P.E.	6	
	P.E.	1	3	Hist.	6	5
	Other	9		Hist. & Soc.	23	
				I.A.	5	3
				I.A. & P.E.	2	
				Math	1	1
				Music	6	4
				P.E.	6	3
				Soc.	4	2
				SP.	3	1
				Other	2	
				Education	-	16
				Psychol.	-	7

Table VI
Information Concerning Permanent Addresses
of Those Currently Enrolled in Graduate Programs
and Current Addresses of Graduates of
Graduate Programs the Last 5 Years

	SDSU		USD		SDSM&T		NSC*		BHSC**	
	S.D.	Other	S.D.	Other	S.D.	Other	S.D.	Other	S.D.	Other
dress of those Enrolled for aduate Credit	339	508	412	818	78	147	752	835	29	39
	(67%)		(50%)		(53%)		(90%)		(74%)	
	(Percentage figures show % of those enrolled who are from South Dakota.)									
dress of Graduates Graduate Program	579	1289	613	2053	39	244	175	291	139	219
	(45%)		(30%)		(16%)		(60%)		(63%)	
	(Percentage figures show % of graduates of graduate programs now living in South Dakota.)									

ctive files of graduate student in degree programs. This is not the same as number currently enrolled or admitted to candidacy.

Those admitted to candidacy for Master's degree. This is not the same as current enrollments.

TABLE VII

South Dakota State University
Breakdown of Present Addresses of Master and
Doctoral Graduates by Residence (Last 5 Years)

Subj. Matter Area	South Dakota	Other
Agron.	1	21
Plant Path.	1	4
Ag. Engr.	7	17
Anim. Sci.	14	46
Poultry Sci.	0	2
Bact.	7	23
Bot.	5	14
Biol.	6	12
Chem.	8	35
Civ. Engr.	15	63
Dairy Sci.	8	15
Ed.	160	274
Agr. Ed.	12	19
Guid. & Couns.	135	244
Econ.	28	66
Electr. Engr.	9	39
English	13	25
Entomology	8	17
Hort.	0	1
Journ.	7	17
Math	2	2
Mech. Engr.	5	31
Physics	1	5
Printing Mgmnt.	2	20
Printing Journ.	1	1
P. E.	68	140
Phys. Therapy	0	1
Rural Soc.	4	17
Speech	15	25
Soc. Sci.	7	13
Home Ec. Ed.	8	9
Foods & Nutrition	2	3
Text. & Cloth.	1	2
Pharmacy	1	4
Pharm. Chem.	0	3
Wildlife Biol.	14	47
Zool.	4	12
TOTAL	579	1289

TABLE VIII

University of South Dakota
Breakdown of Present Addresses of Master and
Doctoral Graduates by Residence (Last 5 Years)

Subj. Matter Area	South Dakota		Other	
Masters Graduates:				
Anatomy	0		0	
Biochem.	1		3	
Biol.	13		49	
Bot.	0		43	
Zool.	11		83	
Bus. Admin.	32		92	
Chem.	15		73	
Classics	0		1	
Commun.	7		16	
Curriculum & Instr.	142		427	
Econ.	1		4	
Ed. Admin.	6		18	
Ed. Psych. & Guid.	63		186	
Eng.	44		103	
Geol.	5		59	
Govt.	18		48	
Hist.	34		107	
Math	36		129	
Microbiol.	0		1	
Modern Foreign Lang.	22		39	
Music	28		61	
Philos.	0		1	
P. E.	30		88	
Physics	0		43	
Physio. & Pharm.	1		5	
Psych.	14		33	
Soc.	11		36	
Speech & Dramatic Arts	25		85	
Theatre	2		8	
Sub Total		561		1841
Specialist Degree	12		23	
Ed. D.	36		116	
Sub Total		48		139
Ph. D. Graduates:				
Anat.	0		0	
Biochem.	1		4	
Zool.	0		12	
Chem.	0		14	
Microbiol.	0		6	
Phy. & Pharm.	0		5	
Psych.	3		32	
Sub Total		4		73
GRAND TOTAL		613		2053

TABLE IX

South Dakota School of Mines & Technology
Breakdown of Present Addresses of Master and
Doctoral Graduates by Residence (Last 5 Years)

Subj. Matter Area	South Dakota		Other	
Masters Graduates:				
Chem. Engr.	1		24	
Chem.	2		16	
Civ. Engr.	6		40	
E. Engr.	9		36	
Geol. & Geol. Engr.	3		24	
Math	5		15	
M. E.	2		24	
Met. Engr.	0		16	
Meterology	3		11	
Mining Eng.	1		14	
Physics	6		22	
Sub Total		38		242
Ph. D. Graduates:				
E. E.	0		1	
Geol.	1		1	
Sub Total		1		2
GRAND TOTAL		39		244

With the previous discussion in mind concerning need, quality, contribution, and costs, it is recommended that the following programs be retained:

SOUTH DAKOTA STATE UNIVERSITY

Master's Programs to be Continued

1. M.Ed. - Agricultural Education
2. M.S. - Agricultural Engineering
3. M.S. - Animal Science
4. M.S. - Bacteriology
5. M.S. - Biology
6. M.S. - Chemistry
7. M.S. - Dairy Science
8. M.S. - Agricultural Economics
9. M.Ed. - Education
10. M.A. - English
11. M.S. - Entomology
12. M.Ed. - Guidance and Counseling
13. M.S. - Physical Education
14. M.Ed. - Social Science
15. M.S. - Home Economics Education
16. M.S. - Journalism
17. M.Ed. - Mathematics
18. M.S. - Agronomy
19. M.S. - Plant Pathology
20. M.S. - Rural Sociology
21. M.S. - Wildlife Biology
22. M.S. - Zoology

Doctoral Programs to be Continued

1. Ph.D. - Animal Science
2. Ph.D. - Agronomy
3. Ph.D. - Rural Sociology

UNIVERSITY OF SOUTH DAKOTA

Master's Programs to be Continued

1. M.N.S. - Biology
2. M.N.S. - Chemistry
3. M.A. - Communications
4. M.A. - Curriculum Instruction
5. M.A. - Economics
6. M.A. - Educational Administration
7. M.A. - English
8. M.A. - Counseling
9. M.A. - Government
10. M.A. - Physical Education
11. M.A. - History
12. M.N.S. - Math
13. M.A. - Psychology

USD - cont.

14. M.A. - Sociology
15. M.A. - Theater
16. M.B.A.
17. M.M. - Music

Doctoral Programs to be Continued

1. Ph.D. - Psychology
2. Ed.D.

SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY

Master's Programs to be Continued

1. M.S. - Chemical Engineering
2. M.S. - Civil Engineering
3. M.S. - Electrical Engineering
4. M.S. - Geology and Geological Engineering
5. M.S. - Mechanical Engineering
6. M.S. - Metallurgical Engineering
7. M.S. - Mining Engineering
8. M.S. - Chemistry
9. M.S. - Mathematics
10. M.S. - Meteorology
11. M.S. - Physics

Doctoral Programs *See discussion under section concerning programs to be dropped.

1. Ph.D. - Electrical Engineering
2. Ph.D. - Geology and Geological Engineering

NORTHERN STATE COLLEGE

1. M.S. - Elementary
2. M.S. - Classroom Teaching--Secondary
   Note: All areas of emphasis under this program (Art, Business, English, HPER, IA, Math, Music, and Soc-Sci.) are temporarily suspended. NSC will present to the Regents a list of proposed areas of emphasis and show the recommended programs in each area, including courses which are exclusively for graduate students.
3. M.S. - Guidance

NOTE: The above programs are to be offered only during the summer except for extension classes which may be offered at other times during the year.

BLACK HILLS STATE COLLEGE

It was previously indicated that a master's degree in education was approved for Black Hills State in 1959. The title of this was changed to Master of Science in Education in 1971. It was further pointed out that although only one master's degree was approved, these are offered in the area of elementary education and secondary education with numerous areas of concentration in each. (You will note that Table V shows eight different areas in elementary and fourteen areas in secondary.)

Dr. Merle Allen, consultant on graduate programs recommended continuance of graduate programs on only two or possibly three campuses. We too have very serious doubts that South Dakota either needs or can afford to provide the quality necessary for the operation and maintenance of graduate programs on five different campuses. Although the faculty at Black Hills State perform commendably well with graduate courses, a limited number of staff in most areas and the limited dollar resources provided makes it virtually impossible to provide the quality of program that should be available for all those who wish to take such programs. Consequently, we feel that very serious consideration should be given to the suspension of all graduate work on that campus. Inasmuch as a fairly large number of graduate students are enrolled for course work at Black Hills State during the summer, it is possible that the Board may wish to consider as an alternative a program whereby graduate courses in certain limited areas are offered on that campus during the summer.

These graduate courses will be offered as a cooperative effort with the state colleges and universities which offer graduate degrees. This alternative would permit a student to take part of his course work at BHSC and complete his degree program on another campus.

It is recognized that many teachers do elect to pursue graduate work at Black Hills State during the summer and over a period of years receive a master's degree. It does not follow, however, that Black Hills State should offer all programs in all areas for all teachers who wish to obtain a master's degree from that institution. A decision was made many years ago that if a student wishes to take a program in agriculture in South Dakota, he has to go to Brookings. If he wishes to receive a law degree, he has to go to Vermillion. If he wishes to receive a master's degree in metallurgical engineering, he has to go to Rapid City. Thus, a decision has been made that in many instances the program will be offered at only one location. With this in mind, we see no reason why we should assure any group of persons that they will be offered an opportunity to receive a graduate degree at the campus nearest them.

With the previous discussion in mind concerning need, quality, contribution, and costs, it is recommended that the following programs be suspended. Phase-out of programs will be over a period of time, not to exceed three years, and will begin effective immediately with no new students to be admitted for fall semester, 1972. It should be emphasized that it may be desirable at some future time to reinstate various suspended programs. This can be done through the usual procedures.

SOUTH DAKOTA STATE UNIVERSITY

Master's Programs to be Suspended

1. M.S. - Agricultural Education
   (Master of Education degree in Agricultural Education would be continued.)

2. M.Ed. - Biological Sciences
   (Master of Science degree in Biology would be continued.)

3. M.S. - Botany
   (SDSU requests permission to drop it.)

4. M.Ed. - Chemistry
   (Master of Science in Chemistry would be continued.)

5. M.S. - Child Development and Family Relations
   (No graduates last five years.)

6. M.S. - Civil Engineering

7. a. M.S. - General Economics
   b. M.A. - General Economics
   c. M.S. - Industrial Economics
   (The Master of Science in Agricultural Economics would be continued. All four degree programs are offered in the same department.)

8. M.S. - Education
   (Master of Education in Education would continue.)

9. M.S. - Electrical Engineering

10. M.Ed. - English
    (Master of Art in English would be continued.)

11. M.S. - Guidance and Counseling

12. M.Ed. - Physical Education
    (Master of Science in Physical Education would be continued.)

13. M.Ed. - Home Economics Education
    (Master of Science in Home Ec. Education would be continued.)

14. M.S. - Horticulture

SDSU - cont.

15. a. M.A. - Journalism
    b. M.Ed. - Journalism
    (Master of Science in Journalism would be continued.)

16. M.S. - Mathematics

17. M.S. - Mechanical Engineering

18. M.S. - Nutrition and Food Science

19. M.S. - Pharmaceutical Chemistry

20. M.S. - Pharmacology

21. a. M.S. - Physics
    b. M.Ed. - Physics
    (SDSU wishes to discontinue.)

22. M.A. - Rural Sociology
    (M.S. in Rural Sociology would be continued.)

23. a. M.A. - Speech
    b. M.Ed. - Speech

24. M.S. - Textiles and Clothing

Ph.D. Programs to be Suspended

1. Ph.D. - Agricultural Engineering

2. Ph.D. - Chemistry

3. Ph.D. - Civil Engineering

4. Ph.D. - Agricultural Economics

5. Ph.D. - Entomology

6. Ph.D. - Plant Pathology
   (SDSU wishes to discontinue.)

UNIVERSITY OF SOUTH DAKOTA

Master's Programs to be Suspended

1. M.A., M.M.S. - Anatomy

2. M.A. - Biochemistry

3. M.A. - Biology
   (Master of Natural Science in Biology would be continued.)

USD - cont.

4. M.A. - Chemistry
   (Master of Natural Science in Chemistry would be continued.)

5. M.A. - Classics

6. a. M.A. - Geology
   b. M.N.S. - Geology
   (Both of the above must be suspended in that an earlier Master Plan recommendation approved by the Board called for the Geology programs to be at the SDSM&T.)

7. a. M.A. - Physics
   b. M.N.S. - Physics

8. M.A. - Mathematics
   (Master of Natural Science in Mathematics will be continued.)

9. M.A. - Foreign Language

10. M.A. - Philosophy

11. M.A. - Physiology and Pharmacology

12. M.M.S.

13. M.A. - Microbiology

Ph.D. Programs to be Suspended

1. Ph.D. - Anatomy

2. Ph.D. - Biochemistry

3. Ph.D. - Microbiology

4. Ph.D. - Physiology and Pharmacology

NOTE: We recommend the suspension of the above four listed Ph.D.'s until such time as a final decision is made concerning the future of the Medical School at the USD. The Board of Regents has gone on record in support of a three year M.D. degree granting program. It is our view that at the present time the graduate programs in the School of Medicine are coming very much at the expense of the other students in the School of Medicine. No more students should be admitted to any of these programs until a final decision has been made concerning the future of the Medical School. This is a temporary suspension and should be reviewed at an early date.

SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY

Programs to be Suspended

1. Ph.D. - Physics
   (This program has never been activated and should not be.)

COMMENT: All of the graduate programs at SDSM&T are concentrated in the area of science and engineering. There appears to be some strength in faculty in all of the programs and the numbers of students enrolled and graduates are not particularly low in any of the areas. The School of Mines has been a highly specialized institution, and inasmuch as the Regents made a decision last year that it should continue in that role, we believe that the present master's programs should be supported.

We doubt that the decision to approve any Ph.D. programs in engineering for the School of Mines in 1967 was a good one. Present enrollments are relatively low and there have been very few graduates. This is to be expected during the first four or five years of a new Ph.D. program. We would not consider either of these Ph.D. programs a high quality program at the present time, but it is quite possible that the School of Mines can develop them to the point where they do have the desired quality. While we are not specifically recommending that these two programs be suspended, we would not be unhappy if that were the case. We would prefer sometime in the future seeing the programs changed to a Ph.D. in engineering and one in science.

NORTHERN STATE COLLEGE

M.S. - Classroom Teaching, Secondary
Note: See comments under programs to be continued.

Master's Programs to be Suspended

1. M.S. - Elementary Supervision
2. M.S. - Secondary Supervision
3. M.S. - Elementary School Principals
4. M.S. - Secondary School Principals
5. M.S. - School Administrators--Superintendents
6. M.S. with emphasis in Special Education

NOTE: A recommendation was made in the Master Plan and presented eighteen months ago that only one institution should offer educational programs for school administrators. Our recommendation that the master's for elementary and secondary supervisors, for elementary and secondary principals, and for school administrators-superintendents, is consistent with that recommendation.

The original Master Plan recommendations also called for all graduate programs in special education to be concentrated at The University of South Dakota. The recommendation that the master's degree in that area be suspended is consistent with the original recommendation.

BLACK HILLS STATE COLLEGE

See previous comments.

SPECIFIC NOTES:

1. Ph.D. - Rural Sociology--South Dakota State University

   This program enrolls a substantial number of students, but has shown few graduates the last five years. Course work is very limited in this program and should be carefully scrutinized.

   It is a relatively low cost program and this is one of the few areas where there is not a Ph.D. surplus.

2. Graduate Programs in Engineering

   The 1970 Master Plan called for one college of engineering in South Dakota, and this recommendation was approved by the Regents. Their decision was that it should be at SDSM&T. Eighteen months later after a major legislative battle, the decision of the Regents has not been overturned. The original recommendation that there should be only one is still valid. Inasmuch as the Regents' staff works at the direction of the Regents, the only recommendation that can be made concerning graduate programs in engineering is that all of them be on one campus.

3. In many instances a recommendation is made that a M.S. degree be retained but a M.A. degree be dropped (or vice-versa) in a given subject matter area. If the institution has a strong preference for the M.A. over the M.S., we recommend they be given approval to do so.

FOOTNOTES

[1]Dale Wolfe and Charles Kidd, "The Future Market for Ph.D.'s," Science, Volume 173, August 27, 1971, pp. 791-792.

[2]Lyman Glenny, "Doctoral Planning for the 1970s," The Research Reporter, Center for Research and Development in Higher Education, University of California, Berkeley, Volume VI, Number 1, 1971, pp. 1-3.

[3]Allan Cartter, "Graduate Education in a Decade of Radical Change," The Research Reporter, Center for Research and Development in Higher Education, University of California, Berkeley, Volume VI, Number 1, 1971, pp. 5-6.

[4]"Ph.D.'s jobless," Chemical and Engineering News, June 14, 1971, p. 26.

[5]"Has Ph.D., No Job," Education Commission of the States Legislative Review, Volume V, Number 4, May, 1972, p. 4.

[6]"New Picture for Ph.D.s," Regents' Report to the Iowa Legislature, Des Moines, Iowa, Volume I, Number 4, April 27, 1972, pp. 2-3.

[7]Ibid., p. 3.

[8]Guidelines for Institutions Offering Advanced Degree Programs, Commission on Institutions of Higher Education, North Central Association, Chicago, Illinois, December, 1970, pp. 3-4, 7-8.

[9]Glenny, p. 3.

[10]Master's Degrees in the State of New York 1969-70, The University of the State of New York, The State Education Department, Albany, New York, 1972, (See New York State Education Department NEWS, April 3, 1972, pp. 1-4.)

[11]Guidelines, NCA, pp. 1-3.

[12]Leadership in Public Education Study - A Look at the Overlooked, Academy for Educational Development, Inc., Washington, D.C., 1972, pp. 45-46.

[13]Glenny, p. 2.

[14]Unit Cost Study Data, 1969-70, State of Illinois, Board of Higher Education, Springfield, Illinois, August 23, 1971.

[15]Volume and Cost of Instructional Activity - Public Colleges and Universities in Colorado, March, 1971, pp. 47-50.

[16]Higher Cost Programs in California Public Higher Education, Council Report 71-3, March, 1971, p. I-7.

[17]An Instructional Analysis of Tennessee Public Higher Education, Tennessee Higher Education Commission, Fall 1969, pp. 37-40.

Enclosure #1

COLORADO COMMISSION ON HIGHER EDUCATION

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June 1, 1972

Dr. Richard D. Gibb
Commissioner of Higher Education
State Board of Regents
State House
Pierre, South Dakota 57501

Dear Richard:

I am enclosing two copies of my recommendations concerning graduate programs at South Dakota's institutions of higher learning. I trust that they will be helpful to you in your effort to reduce the total offering in both masters and doctorate programs in South Dakota.

As shown in the report, it seems to me that the only doctorate programs that should be retained in the state are the Ed.D. programs at the University of South Dakota. None of the others would seem large enough to be justified.

I believe in most cases the masters programs that would remain after the doctorates and several of the masters majors are eliminated could be better maintained and developed at a quality level. Better support to the undergraduate program should also be possible.

I have much enjoyed my visit to South Dakota and would like to congratulate both you and your Board in this progressive effort you are making to prune programs and courses in such a way that you can achieve greater quality in remaining programs.

It has been a pleasure to work with you.

Sincerely yours,

Merle E. Allen

Merle E. Allen
Associate Director

MEA/sk
Enc.

RECOMMENDATIONS CONCERNING GRADUATE PROGRAMS AT SOUTH DAKOTA'S INSTITUTIONS OF HIGHER LEARNING

- Merle E. Allen -

I. Doctorate Programs

A. Ed.D. Programs at University of South Dakota

I have carefully reviewed the doctorate programs offered at each of the three institutions now offering such programs within the state and find that the only programs that seem defensible are the Ed.D. programs in:

Curriculum and Instruction
Educational Administration
Educational Psychology and Guidance

I feel that these Ed.D. programs are justifiable for the following reasons:

1. Production levels are high enough to make it possible to achieve quality programs without unduly high costs.

2. Average student credit hour costs are reasonable.

3. The program is accommodated by an extended year with good production during the summer months.

4. The staff on board seems to be well qualified to handle the program.

5. Having recognized these primary justifications, several secondary factors can legitimately be recognized:

   a. The programs strengthen the School of Education at the masters and bachelors level.

   b. It provides an important research and development facility for the education programs throughout the state.

B. Ph.D. Programs

A review of all other doctorate programs shows enrollment and production levels so low that their continuation would seem questionable or even untenable. At a time when there is a serious oversupply of doctorates already produced and a rapidly growing capacity to produce more, it does not seem appropriate to have three institutions in South Dakota limping along with programs that have so few students and such limited resources. It is hardly necessary for the South Dakota institutions to continue these programs since there is so much capacity to handle the load in other larger and better supported institutions.

In collecting information and professional opinions concerning this problem, I asked, among others, an academic vice president at a major university how many majors he felt were needed ordinarily to support a doctorate major. He answered that an institution could not ordinarily expect to achieve reasonable quality with defensible cost levels with less than fifteen students in the major. The only Ph.D. programs that show this many majors are psychology at U.S.D. with 25 and animal science at S.D.S.U. with 17.

More specifically, a review of the Ph.D. majors at each of the three institutions show some serious limitations.

1. University of South Dakota

Anatomy, Biochemistry, Microbiology and Physiology and Pharmocology show an average production in 1971 of one each.

Even this is above the average production in these same fields during the last five years. Surely this is not production enough to justify the programs.

I would also suggest that these programs are not required to make the two year medical school tenable. The level of preparation of the freshman and sophomore medical students in these fields could not be expected to equal even the masters level since they spent so short a time on each one of these subjects along with others included in the "medical" curriculum.

The Psychology degree is the only one with any reasonable claim since the program seems to be stronger and does have a fairly good production history. It would seem, however, that it is difficult to justify just one Ph.D. program in the institution. It might well be better to concentrate on a good masters level program than to be involved in producing Ph.D.'s in such a limited fashion.

2. South Dakota State University

Eight Ph.D. programs apparently produced 13 doctorates in 1971. Only Animal Science and Entomology produced as many as 4 each and Rural Sociology, Chemistry and Agronomy show 1 each with none for Agricultural Economics, Agricultural Engineering and Civil Engineering. It is not expected that high

quality programs can be mounted in these areas at low cost. They are expensive. It would seem much more logical to draw on the capacities of larger institutions in more populous states for these programs.

Mounting strong masters programs in those areas where need, volume of production and institutional role make such a move appropriate would seem to be a more logical move for the state.

3. South Dakota School of Mines and Technology

Information supplied to me shows three doctorate majors at S.D.S.M.T.

Electrical Engineering
Geology and Geological Engineering
Physics

Only two graduates are shown from 1967 to 1971 in these three programs. In fact Physics shows no majors as yet. It would seem most prudent not to seek to accredit or mount a Physics doctorate and to discontinue both of the others.

II. Masters Programs

There are some strong masters programs within the state. Several of these should be maintained and strengthened. It is seriously questionable, however, that there should be five public institutions offering graduate programs in South Dakota. Reducing to three or even two graduate institutions in South Dakota would seem like a sensible move.

Recommendations concerning masters programs in South Dakota:

A. Agriculture (Limited to S.D.S.U.)

Programs should be limited to:

Agricultural Economics
Agricultural Education (Ed)
Agronomy
Animal Science
Dairy Science*
Wildlife Biology

Horticulture and Agricultural Education (Sc) are not justified.

* Consideration might well be given to eliminating Dairy Science and meeting the limited need with the Animal Science major.

B. Biological Sciences

1. First Biology, Education should be eliminated from Black Hills State College. There is little point in mounting a graduate program for so small a demand.

2. At S.D.S.U. these offerings should be limited to:

Bacteriology
Biological Science
Biology, General
Entomology
Zoology

Not recommended are:

Botany (which is to be dropped)
Pharmacology

3. At S.D.U. Biology majors should be limited to:

Biology (arts)
Biology (Sc)

Not recommended are:

Anatomy
Biochemistry
Physiology-Pharmacology

C. Business and Commerce

1. It would strengthen these programs if all in the field were located at one institution. It would appear most logical to locate at S.D.U.

2. None of these programs at S.D.S.U. are large enough to appear justified and it would strengthen the program at S.D.U., particularly in Economics, if the strength could be brought together.

3. The business education masters at N.S.C. and at B.H.S.C. would seem better placed at S.D.U. There is little justification for maintaining such isolated and limited programs.

D. Education

1. It would seem much more logical to limit teacher education to not more than two institutions, most appropriately S.D.U. and S.D.S.U.

2. Recommended to be maintained at S.D.S.U. are:

Education (Ed)
Guidance and Counselling (Ed)

Both science degrees here would seem inappropriate.

3. The program at S.D.U. could be greatly strengthen if B.H.S.C. and N.S.C. discontinued graduate work in education.

Recommended to continue offering:

Counselling (Art)
Curriculum/Instruction (Art)
Educational Administration (Art)

Other limited majors may need to be added to offset the elimination of masters programs at B.H.S.C. and N.S.C.

4. There seem to be serious limitations with the following programs at B.H.S.C. (These should especially be discontinued.)

Business Education
English
Speech
Psychology
Guidance and Counseling
Special Education
Music
Industrial Arts
Physical Education
Biology
Chemistry
Mathematics
History
Sociology

Many of these are really subject matter specialties and could better be offered at one of the universities.

5. Northern has a very long list of masters in education and if the state should decide to retain any graduate work at the institution it should reduce the number of majors to less than half the present number.

Especially questionable are the following majors:

Art
Business
Industrial Arts
Mathematics
Music
Social Science
Elementary Supervision
Secondary Supervision

E. Engineering

1. One state institution offering masters in engineering would be better than two. It would also appear appropriate for the state to reduce the number of engineering majors.

2. The costs shown in the reports do not seem to recognize actual costs here. The number of faculty listed suggests low student teacher ratios yet the costs are reported to be very low. The report would appear to be questionable.

F. English and Journalism

1. The Classics (Arts) major should be eliminated at S.D.U.

2. It would seem logical to move the masters in English, both (Art) and (Sc) from S.D.S.U. to S.D.U. and eliminate the masters in Journalism.

G. Fine and Applied Arts

1. Music at S.D.U.--OK

2. Art Education at N.S.C. questionable

3. Music Education majors at N.S.C. and B.H.S.C. do not appear viable.

H. Speech and Drama

1. Not enough load to justify more than one institution offering the masters here.

2. Not viable at B.H.S.C.

I. Foreign Languages

1. Should eliminate graduate work in languages.

J. Health Professions

1. Medical Science should not be initiated.

2. Nursing and Allied Health would not appear feasible on the graduate level.

3. Pharmaceutical Chemistry does not appear to be viable.

K. Home Economics

1. The Home Economics masters program at S.D.S.U. does not appear to be viable. It would appear that this field should be limited to the bachelors level.

L. Mathematics

1. Mathematics Education does not appear viable at B.H.S.C. nor at N.S.C.

2. Mathematics masters should also be eliminated at S.D.S.U.

3. A viable Mathematics program at S.D.U.

M. Philosophy

1. Not a viable masters program at S.D.U.

N. Physical Education

1. Probably not viable at N.S.C.

2. Appears viable at both universities.

O. Physical Science

1. It is unfortunate that there are four institutions offering masters in Chemistry within the state. It would be well to reduce to two.

2. Chemistry Education not really viable at B.H.S.C.

3. Geology appears viable at S.D.U.

4. Meteorology is a questionable masters program.

5. Masters in Physics should be limited to <u>one</u> institution.

P. Psychology

1. OK at S.D.U.

Q. Social Science

1. It is doubtful that rural sociology masters are viable programs at S.D.S.U.

2. The Social Science major appears viable.

3. All three programs at S.D.U. appear tenable.

MEA/sk
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